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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte CHARLES L. BRABENAC

Appeal 2008-002942¹
Application 09/746,205
Technology Center 2100

Decided:² June 30, 2009

Before JEAN R. HOMERE, JOHN A. JEFFERY, and
ST. JOHN COURTENAY III, *Administrative Patent Judges*.
HOMERE, *Administrative Patent Judge*.

DECISION ON APPEAL

¹ Filed December 12, 2000. The real party in interest is Intel Corporation.

² The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

I. STATEMENT OF THE CASE

Appellant appeals under 35 U.S.C. § 134(a) from the final rejection of claims 2, 5, 9, 12, 13, and 15 through 38. Claims 1, 3, 4, 6 through 8, 10, 11, and 14 have been cancelled. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

Appellant's Invention

Appellant invented a method and apparatus for filtering network packets based on associated ports. (Spec. 1: 4-5). As depicted in Figure 2, upon receiving at a port filter (276) an incoming packet including a port number, the port filter (276) determines whether the port number is associated with an application (260) on a power-managed host computer (110). If such an association exists, the port filter (276) sends a wake up message to the host computer (110). Otherwise, it discards the packet. (Spec. 8: 6-14, 11:16-23.)

Illustrative Claims

Independent claims 2 and 33 further illustrate the invention. They read as follows:

2. A method, comprising:
 - receiving a packet at a port filter, wherein the packet comprises a port number;
 - determining whether there is a host application associated with the port number;

when there is not a host application associated with the port number, discarding the packet; and

when there is a host application assigned to the port number, sending a wake-up message to a power-managed host computer that is operable in either a power-managed state or an operational state.

33. An apparatus, comprising:

a first stage filter to:

receive a packet;

interrogate the packet as to whether the packet includes data that matches selected data of a host computer; and

reject the packet when the packet does not include data that matches selected data of the host computer;

a second stage filter to:

receive the packet comprising a port number;

determine whether there is a host application associated with the port number; and

reject the packet when there is not a host application associated with the port number,

wherein the apparatus further is to present the packet to the host computer when there is a host application associated with the port number and when the packet includes data that matches the selected data of the host computer.

Prior Art Relied Upon

The Examiner relies on the following prior art as evidence of unpatentability:

| | | |
|----------------|--------------|---------------|
| McKaughan | 5,802,305 | Sep. 1, 1998 |
| Graham-Cumming | 6,182,146 B1 | Jan. 30, 2001 |
| Novoa | 6,493,824 B1 | Dec. 10, 2002 |

Rejections on Appeal

The Examiner rejects the claims on appeal as follows:

1. Claims 2, 5, 9, 12, 13, and 15 through 30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Graham-Cumming and McKaughan.
2. Claims 31 through 38 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Novoa and Graham-Cumming.

Appellant's Contentions

1. Appellant contends that the Examiner erred in concluding that the combination of Graham-Cumming and McKaughan renders independent claim 2 unpatentable. (App. Br. 10-13.) In particular, Appellant argues that the Examiner failed to provide a sufficient rationale, as well as a reasonable expectation of success for the proffered combination to properly establish the prima facie case of obviousness. (*Id.*) According to Appellant, because the Graham-Cumming reference allegedly continues to attempt to identify an application for a packet when no associated application has been found, modifying the reference to pass the packet to a default application would

defeat the purpose of the reference. (App. Br. 11-12.) Further, Appellant contends that there is no evidence of record to substantiate that Graham-Cumming's host computer can operate in McKaughan's low power mode to analyze packets. (App. Br. 13.)

2. Appellant contends that the Examiner erred in concluding that the combination of Novoa and Graham-Cumming renders independent claim 33 unpatentable. (App. Br. 14-17.) In particular, Appellant argues that the Examiner failed to provide a sufficient rationale for the proffered combination to properly establish the prima facie case of obviousness. (*Id.*) According to Appellant, there is no evidence of record to indicate how Graham-Cumming's dynamic ports are be used for security purposes since the reference does not disclose the asserted equivalency between the dynamic mode and a filter. (App. Br. 14.) Further, Appellant argues that there is no suggestion of record to substantiate that Novoa could be modified with Graham-Cumming's teachings, as proposed by the Examiner, to improve the accuracy of traffic detection, accounting, and reporting. (App. Br. 15-16.)

Examiner's Findings and Conclusions

1. The Examiner avers that the disclosures of Graham-Cumming and McKaughan are properly combined to render independent claim 2 unpatentable. In particular, the Examiner finds that McKaughan's disclosure of operating a computer system in a low power mode when not receiving relevant packets, and waking up the computer upon receiving a relevant

packet would result in conserving energy in any computer system including Graham-Cumming's. (Ans. 12-13.)

2. The Examiner finds that the disclosures of Novoa and Graham-Cumming are properly combined to render independent claim 33 unpatentable. In particular, the Examiner finds that Graham-Cumming's disclosure of dynamically mapping application and ports to provide security would improve the accuracy of traffic detection, accounting and reporting in Novoa's system. (Ans. 13-14.)

II. ISSUES

1. Has Appellant shown that the Examiner erred in finding sufficient rationale to combine Graham-Cumming and McKaughan to render independent claim 2 unpatentable?

2. Has Appellant shown that the Examiner erred in finding sufficient rationale to combine Novoa and Graham-Cumming to render independent claim 33 unpatentable?

III. FINDINGS OF FACT

The following Findings of Fact (FF) are shown by a preponderance of the evidence.

Graham-Cumming

1a. Graham-Cumming discloses a system for dynamically determining network applications associated with ports that received data packets. As shown in Figure 3, upon receiving a raw data packet including a source port, a destination port, a packet header and a payload, a packet

analysis module (100) forwards the packet to an application identifier module (102), which identifies an application associated with the received packet. (Col. 5, l. 59- col. 6, l. 21.)

1b. The application identifier module then processes the packet until it identifies an appropriate application for handling the packet. (Col. 6, ll. 62-65.) If it is unable to identify a suitable application, the application identifier module forwards the packet to the application port mapping table (104) to invoke an application for processing the packet. If, however, the application port mapping table is also unable to locate a suitable application, the packet is discarded or assigned a default application for unknown packets. (Col. 7, ll. 46-54.)

1c. Graham-Cumming further discloses that dynamic ports are frequently used for improved resource sharing, security to dynamically handle network traffic. (Col. 1, ll. 60-63.)

McKaughan

2a. McKaughan discloses a system for remotely waking up a sleeping computer from a power down state upon finding a match between an incoming packet identifier and one of the packet identifiers stored in a network interface card. (Col. 4, ll. 29-43.)

2b. McKaughan discloses that operating the computer system in a power down state offers the benefit of conserving energy in network computing. (Col. 3, ll. 4-12.)

Novoa

3a. Novoa discloses a secure system for remotely waking up a sleeping computer from a power down state upon finding (1) a match

between the destination address of an incoming packet and that stored on a list in a network interface card, and (2) a wake up pattern therein. (Col. 4, ll. 48-59.)

3b. The wake up pattern contains a security field, including an encrypted value, which is decrypted and examined to validate the wake up pattern. If the decrypted value matches an expected value, the wake up value is deemed to be valid, and a signal is issued to awaken the computer. Otherwise, the packet is discarded. (Col. 8, ll. 21-41.)

IV. PRINCIPLES OF LAW

Burden on Appeal

Appellant has the burden on appeal to the Board to demonstrate error in the Examiner's position. *See In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) ("On appeal to the Board, an applicant can overcome a rejection by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness.") (quoting *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)).

Obviousness

A claimed invention is not patentable if the subject matter of the claimed invention would have been obvious to a person having ordinary skill in the art. 35 U.S.C. § 103(a); *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007); *Graham v. John Deere Co.*, 383 U.S. 1, 3 (1996).

Section 103 forbids issuance of a patent when "the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at

the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.”

KSR, 550 U.S. at 406.

The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, (3) the level of skill in the art, and (4) where in evidence, so-called secondary considerations. *Graham*, 383 U.S. at 17-18. *See also KSR*, 550 U.S. at 407 (“While the sequence of these questions might be reordered in any particular case, the [Graham] factors continue to define the inquiry that controls.”).

In *KSR*, the Supreme Court emphasized “the need for caution in granting a patent based on the combination of elements found in the prior art,” and discussed circumstances in which a patent might be determined to be obvious without an explicit application of the teaching, suggestion, motivation test. *KSR*, 550 U.S. at 415-16.

In particular, the Supreme Court emphasized that “the principles laid down in *Graham* reaffirmed the ‘functional approach’ of *Hotchkiss*, 11 How. 248” (*id.* at 415 (citing *Graham*, 383 U.S. at 12)); and reaffirmed principles based on its precedent that “[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *Id.* at 416. The Court explained:

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, §103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would

improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.

Id. at 417. The operative question in this “functional approach” is thus “whether the improvement is more than the predictable use of prior art elements according to their established functions.” *Id.*

If the claimed subject matter cannot be fairly characterized as involving a simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for improvement, a holding of obviousness can be based on a showing that “there was an apparent reason to combine the known elements in the fashion claimed.” *Id.* at 418. Such a showing requires the Examiner provide “some articulated reasoning” in the rejection, which possesses a “rational underpinning to support the legal conclusion of obviousness.” *Id.* (quoting *In re Kahn*, 441 F.3d at 988). The Supreme Court, citing *Kahn*, 441 F.3d at 988, stated that “rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR*, 550 U.S. at 418. However, “the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *Id.*

It is a basic principle that the question under 35 U.S.C. § 103 is not merely what the references expressly teach but what they would have suggested to one of ordinary skill in the art at the time the invention was

made. *See Merck & Co. Inc., v. Biocraft Labs., Inc.*, 874 F.2d 804, 807 (Fed. Cir. 1989).

Nor is it necessary that the suggestion or motivation be found within the four corners of the references themselves. “The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art.” *In re Keller*, 642 F.2d 413, 425 (CCPA 1981). “The obviousness analysis cannot be confined by the formalistic conception of the words teaching, suggestion, and motivation, or by overemphasis on the importance of . . . the explicit content of issued patents.” *KSR*, 550 U.S. at 419.

Consistent with *KSR*, the Federal Circuit recently recognized that “[a]n obviousness determination is not the result of a rigid formula disassociated from the consideration of the facts of a case. Indeed, the common sense of those skilled in the art demonstrates why some combinations would have been obvious where others would not.” *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1161 (Fed. Cir. 2007). The Federal Circuit relied in part on the fact that Leapfrog had presented no evidence that the inclusion of a reader in the combined device was “uniquely challenging or difficult for one of ordinary skill in the art” or “represented an unobvious step over the prior art.” *Id.* at 1162.

V. CLAIMS GROUPING

Appellant argues claims 2, 5, 9, 12, 13, 15-30 as a single group. Similarly, Appellant argues claims 31-38 as a single group. In accordance with 37 C.F.R. § 41.37 (c)(1)(viii), claims 2, 5, 9, 12, 13, 15-30 stand and fall with independent claim 2, and claims 31-38 stand or fall with independent claim 33.

VI. ANALYSIS

Claim 2

Independent claim 2 recites, in relevant parts, (1) upon determining that a packet received at a port filter is associated with a host application, sending a wake up message to the host computer; (2) otherwise, discarding the packet. As set forth in the Findings of Fact section, Graham-Cumming discloses a system for dynamically mapping data packets received at a filter port to corresponding computer host applications capable of processing the received packets. (FF. 1a.) Further, Graham-Cumming discloses that a received packet is discarded or assigned a default application if a suitable application cannot be identified. (FF. 1b.) McKaughan complements Graham-Cumming by disclosing a system for sending a wake up signal to a sleeping host computer on a network upon finding that the identifier of a received packet matches a packet identifier stored in a network interface card. (FF. 2a.) We find that Graham-Cumming and McKaughan disclose prior art elements that perform their ordinary functions to predictably result in a system that dynamically examines data packets received in a network to

only forward authorized ones to a host computer system. *See KSR*, 550 U.S. at 417. Therefore, we find the Examiner's proffered combination is proper.

Assuming that the Examiner must articulate some additional reasoning for combining the references, we find that the Examiner has provided ample reasoning to justify the proffered combination. In particular, the Examiner explained that it would have been obvious to one of skill in the art at the time of the invention to incorporate McKaughan's method of waking up a host computer in a sleeping mode upon receiving an authorized packet into Graham-Cumming's dynamic mapping of received packets to host applications. (Ans. 5.) The Examiner also explained that the incorporation of McKaughan's teachings into Graham-Cumming's would provide the advantage of conserving energy in the host computer system. (Ans. 12.) We find that Graham-Cumming's disclosed advantage of enhancing security in a network by forwarding only authorized packets to a host computer (FF. 1c), and McKaughan's disclosed advantage of conserving energy in the network by forwarding only relevant packets (FF. 2b) to wake up the host computer would complement each other. We therefore find that the Examiner has provided a sufficient motivation to warrant the proffered combination. It follows that Appellant has not shown that the Examiner erred in concluding that the ordinarily skilled artisan would have found sufficient motivation to combine the teachings of Graham-Cumming and McKaughan to render claim 2 unpatentable.

Claim 33

Independent claim 33 recites, in relevant parts, (1) a first stage filter to discard a received packet if data included therein does not match that at a host computer, and (2) a second stage filter to discard a received packet if data therein is not associated with a host application. As set forth in the Findings of Fact section, Novoa discloses a system that remotely wakes up a sleeping computer upon determining that host computer data in a received packet matches data in a list stored on a network interface card of the computer. (FF. 3a.) Otherwise, it discards the packet. (FF. 3b.) Further, Graham-Cumming complements Novoa's system by disclosing that a received packet is discarded or assigned a default application if a suitable application cannot be identified. (FF. 1b.) We find that, similarly to the combination discussed above, Novoa and Graham-Cumming disclose prior art elements that perform their ordinary functions to predictably result in a system that dynamically examines data packets received in a network to only forward authorized ones to a host computer system. *See KSR*, 550 U.S. at 417. Therefore, we find the Examiner's proffered combination is proper.

Assuming that the Examiner must articulate some additional reasoning for combining the references, we find that the Examiner has provided ample reasoning to justify the proffered combination. In particular, the Examiner explained that it would have been obvious to one of skill in the art at the time of the invention to incorporate Graham-Cumming's dynamic mapping of received packets to host applications into Novoa's method of waking up a host computer in a sleeping mode upon receiving an authorized packet. (Ans. 10.) The Examiner also explained that the incorporation of

Graham-Cumming's teachings into Novoa's would provide the advantage of enhancing the ability to monitor network traffic and enhance security thereon. (Ans. 13-14.) We find that Graham-Cumming's disclosed advantage of enhancing security in a network by forwarding only authorized packets to a host computer and Novoa's disclosed advantage of conserving energy in the network by forwarding only relevant packets to wake up the host computer would complement each other. We therefore find that the Examiner has provided a sufficient motivation to warrant the proffered combination. It follows that Appellant has not shown that the Examiner erred in concluding that the ordinarily skilled artisan would have found sufficient motivation to combine the teachings of Novoa and Graham-Cumming to render claim 33 unpatentable.

VI. CONCLUSION OF LAW

Appellant has not shown that the Examiner erred in concluding that claims 2, 5, 9, 12, 13, and 15 through 38 are unpatentable as set forth above.

VII. DECISION

We affirm the Examiner's decision to reject claims 2, 5, 9, 12, 13, and 15 through 38.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

Appeal 2008-002942
Application 09/746,205

msc

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